

REMARKS / DISCUSSION OF ISSUES

Claims 1-9 are presently under consideration in the application. Claims 1, 7 and 8 are independent claims.

The claims are not amended.

Rejections Under 35 U.S.C. § 102

Claims 1-4 and 7-9 are rejected under 35 U.S.C. § 102(b) as being anticipated by *Shiffman* (U.S. Patent 6,624,732). For at least the reasons set forth herein, Applicants respectfully submit that these claims are patentable over the applied art.

At the outset Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, a proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Anticipation requires that **each and every element of the claimed invention be disclosed in a single prior art reference.** *See, e.g., In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Alternatively, **anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice.** *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, **there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention.** *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991). (Emphasis provided in each instance.)

Claim 1 is drawn to a method of processing images and features:

*“...a multi-dimensional data set is constructed from the individual images,
which multi-dimensional data set assigns data values to positions in a multi-dimensional space,*

*which multi-dimensional space is set up by the direction of succession and two directions parallel to the surface of the individual images,
a slice through the multi-dimensional data set is reconstructed along a cut plane through the multi-dimensional space..."*

Claims 7 and 8 include similar features.

Succinctly, claims 1, 7 and 8 feature a multidimensional data set that is **constructed from individual images**; and a slice through the multi-dimensional data set that is **reconstructed along a cut-plane**.

In connection with the description of Figs. 1 and 2, the filed application discloses:

"Fig. 1 is notably a representation of the multi-dimensional data set (in this case a 3D data set) 2 that is composed of the individual images 1 that are arranged one behind the other in the direction of succession 6. This means that the images that relate to a later instant in time are shown further forwards in Fig. 1. The cut plane 3 extends approximately perpendicularly to the plane of drawing in Fig. 1. The reconstructed slice along the cut plane 3 is shown in a simple form in Fig. 2. For the sake of simplicity, the region of interest 7, 8, 9 is indicated in a few (three) individual images only."

Thus, there is a construction and a reconstruction as specifically recited in claims 1, 7 and 8, with the reconstruction of a slice being a two-dimensional reconstruction.

The Office Action turns to column 8, lines 4-5 of *Shiffman* for the teaching of the construction and to column 8, lines 15-17 for the reconstruction as claimed. Moreover, Fig. 9 is relied upon in the germane portions of the Office Action. To wit, the Office Action asserts:

Constructing a multi-dimensional data set is constructed from the individual images (col. 8 lines 4-5) [The multi-dimensional data set is the 3-dimensional volume (Fig. 8, 42) that results from stacking the 2-dimensional images (21, 26, 32).],

and

reconstructing a slice through the multi-dimensional data set along a cut plane through the multi-dimensional space (col. 8 lines 15-17) [The reconstructed slices are represented by the 2-dimensional

planes {note these are referred to as 2-dimensional planes and not 2-dimensional images (21, 26, 32)} as shown in Figure 9.] such that, the direction of the cut plane has a component in the direction of succession (col. 8 line 17) [The cut plane is the direction in which the image volume (42) is sliced. Shiffman discloses

However, while the reference to *Shiffman* discloses the **construction** of a three-dimensional image volume 42 from two-dimensional images, the reference specifically **lacks** the disclosure of a slice through the multi-dimensional data set that is **reconstructed along a cut-plane** as claimed. Most notably, after the construction of the three-dimensional image volume 42, the image volume 42 is sliced into parallel two-dimensional image planes. Thus, rather than teach the **reconstruction** of a slice (i.e. a two dimensional reconstruction) as claimed, the reference teaches slicing of a three dimensional image volume into a two dimensional image plane. Stated differently, the Applicants teach the **reconstruction** to realize the (two-dimensional) slice; whereas the applied art teaches the **deconstruction** of a three-dimensional structure to form slices of two dimensional image planes. (Kindly refer to column 8, lines 1-23 and Figs. 8 and 9 for support for these assertions.)

In the response to Applicants arguments to the last Office Action, the Examiner states:

The Patent Office is charged with the task of giving claims their broadest reasonable interpretation. The federal circuit has repeatedly held that the office is not to read limitations from the spec into the claims. Here, it is not clear what limitations the applicant wishes to read into the claims. Applicant has not argued for a specific interpretation of "reconstructing" that would evade *Shiffman*. Rather, applicant has simply stated that the slices in Figure 9 have not been reconstructed. The examiner respectfully disagrees. The slice shown in Figure 9 and described at col. 8 is a reconstructed slice because it is formed after the image volume has been generated.

Applicants understand the responsibility of the Office in the substantive examination of applications. Applicants have spelled out clearly that the construction and reconstruction elucidated above. Applicants also have reviewed the Examiner's position and respectfully submit that the Examiner is mistaken in the interpretation of the reference to *Shiffman*.

For at least the reasons set forth above, Applicants respectfully submit that the reference to *Shiffman* fails to disclose at least one feature of claims 1, 7 and 8; and that

one of ordinary skill in the field of the invention would discern at least one difference between the applied art and claims 1, 7 and 8. Therefore, claims 1, 7 and 8 and the claims that depend therefrom are patentable over the applied art. Allowance is earnestly solicited.

Rejections Under 35 U.S.C. § 103


Claims 5 and 6 are rejected under 35 U.S.C. § 103(a) in view of *Shiffman* in view of a secondary reference. While Applicants in no way concede the propriety of this rejection, Applicants submit that claims 5 and 6 are patentable at least because the claim from which they ultimately depend is patentable.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:
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